Bulletin

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NATIONAL
TUBERCULOSIS
ASSOCIATION

Bulletin

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VOL. 47 NO. 6

Published monthly except August at 404 North Wesley Ave., Mount Morris, Ill., by the National Tuberculosis Association for persons interested in public health and administrative aspects of tuberculosis and respiratory disease control, and made possible by Christmas Seal contributions. The editors welcome articles for possible publication. If any article deals with a subject on which there may be differences of opinion, the BULLETIN will be glad to consider presentation of varying opinions in the same or subsequent issues. The opinions expressed in signed articles are the authors' and do not necessarily reflect those of the National Tuberculosis Association. Editorial Office: 1790 Broadway, New York 19, N.Y. Second class postage paid at Mount Morris, Ill.

A TRIBUTE TO A DO

■ IN THE FALL OF 1925 there came together on the University of Minnesota campus a motley group of young men of various sizes, shapes and degrees of sophistication to form the Medical School class of 1929. In that group several were destined to become prominent in public health work: an expert in health education on the staff of the American Medical Association; an expert consultant to other nations on public health administration; the director of the Division of Industrial Hygiene of the Oregon State Board of Health; the commissioner of health of the City of Toledo; the commissioner of health of the State of Minnesota; the commissioner of health of the State of New York; the managing director of the National Tuberculosis Association; and the director of research of the National Tuberculosis Association.

There was one who particularly made his presence known, not only by his high scholastic attainments, but also by his long coon-skin coat, his slightly antique, but still snappy, Packard roadster, and his tooting of the hottest saxophone on the Minnesota campus, which resulted not only in his being a member of one of the most popular jazz bands on the campus, but also in his accompanying that band on two summer tours of Europe. His name was Floyd M. Feldmann, of Pipestone, Minnesota, and he had completed his academic college work at the highly respected Carleton College in the southern part of the state.

While he was interning at the Ancker Hospital in St. Paul in 1929-1930, Floyd confided to his roommate that he thought he might like to become an orthopedic surgeon, but opportunities for such training were scarce at that time. The following fall, when his roommate had an opportunity to take a course at the Johns Hopkins School of Hygiene and Public Health and inquired whether or not Floyd might like to substitute for him as epidemiologist for the Minnesota State Board of Health, Floyd decided to give it a try – and has remained in public health work ever since.

After a year as a general epidemiologist in the Minnesota Health Department, he served as the tuberculosis epidemiologist working out of the State Tuberculosis Sanatorium, Ah-Gwah-Ching, at Cass Lake, Minn. In this capacity he not only conducted tuberculosis field studies and otherwise assisted in the control of tuberculosis, but in his spare time used his imagination, scientific knowledge and mechanical skill to build an electrostatic machine of possible potential use in taking X-rays in communities without electricity, as well as to build himself a sailboat to while away some happy hours in the land of sky-blue waters.

He then received two years of training at the Johns Hopkins School of Hygiene and Public Health, in which he majored in epidemiology with particular emphasis on tuberculosis. While in Baltimore, he met an attractive Johns Hopkins nurse by the name of Marjorie Mann, who became Mrs. Feldmann and who shared his life with him in Minnesota as he became successively a state district health officer and the health officer of Rochester and Olmsted County, in which the famous Mayo Clinic is located. This model county and city health department was used for demonstration, research and training purposes for other public health personnel throughout the state. During this period in Minnesota, Dr. and Mrs. Feldmann became the proud parents of two daughters, Jane and Margaret.

In 1948 the lure of his initial training and experience in tuberculosis work became too strong. Floyd and his family moved to Washington,

DOCTOR

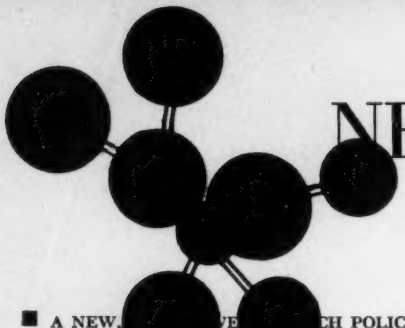
D.C., while he served in the U. S. Public Health Service as medical director in the Central Coordination and Analysis Office and executive secretary of the Tuberculosis Study Section. A little over a year later his old internship roommate was able to persuade him to join the staff of the National Tuberculosis Association as the medical assistant to the managing director.

Serving in that capacity, shortly afterward as medical director of the NTA, and then as director of research, he took care of innumerable details involving medical problems submitted to the NTA; policed its publications for medical accuracy; assisted in the medical aspects of the design and production of audio-visual materials; gave other members of the national staff sound advice on epidemiologic and public health matters as well as specific tuberculosis questions; promoted an expanded research program of both the NTA and its affiliates; called to the attention of tuberculosis workers developments in other fields of science which might be applied with profit to the tuberculosis field; and patented in the name of the NTA a tuberculin testing device and method which may supplant current methods.

It will be impossible to replace Floyd by anyone with the breadth of his knowledge and experience in all aspects of science, epidemiology and public health administration. All members of the national staff, as well as those in the field, will greatly miss his always wise, calm and sedate (what *did* happen to that coon-skin coat?) counsel. We all wish him well in his new, interesting and stimulating work with Walsh McDermott at the New York Hospital-Cornell Medical Center.

JAMES E. PERKINS, M.D.
Managing Director,
National Tuberculosis Association

VIRULENT TUBERCLE BACILLI magnified 38,000 times under an electron microscope. The photo was taken by Margret I. Sellers, Ph.D., University of California Medical Center, who receives a research grant from NTA. The bacilli shown are of a strain frequently used in research work—H37R$_v$.



NEW DESIGN for Research

Floyd M. Feldmann, M.D.

■ A NEW, [illegible]CH POLICY has been adopted by the Co[illegible]on [illegible]rch of the American Thoracic Society. The focus will be on obvious blocks to progress in solving major problems in tuberculosis treatment and control and on pressing problems in other respiratory diseases. By pinpointing the objectives, the Committee expects to stimulate an intensive search for scientific unknowns, ranging from the profound basic to the immediately practical.

In the field of the basic unknowns, particular emphasis will be placed on working toward a better understanding of the tubercle bacillus and its complex relations with the host in which it takes up residence. In the field of the immediately practical, whenever applications for new discoveries in the tuberculosis field appear to be in the offing, developmental projects may be promoted. Moreover, solutions for some everyday problems in tuberculosis control will be sought more directly than in the past.

These moves are highly significant. The new policy represents a shift from what has been called a "permissive" research policy to one which recognizes prime objectives and is flexible enough to include suggestion and even promotion of research projects along with selection of projects. The Committee will still consider unsolicited applications for grants-in-aid, but this will be only one of its obligations.

One might ask why the Committee believed a more positive program was indicated. The reasons, in brief, were:

1. A gradually decreasing interest in tuberculosis among capable and experienced investigators.
2. Rapidly rising costs of research with a static NTA-ATS research budget.
3. Scientific advances in other fields not paralleled in tuberculosis research.
4. Opportunities now available for development of more useful tools for tuberculosis control and eventual eradication.

Many scientists are not aware of the size of the remaining tuberculosis burden and believe that other research needs outrank it in the competition for brains and dollars. Furthermore, the younger scientists would rather work with other bacteria and viruses that grow faster and are less difficult to handle than the tubercle bacillus. Unless the needs and opportunities in tuberculosis research are promoted among scientists and efforts are made to provide more long-term support for top-level projects, the drift of scientists away from tuberculosis will continue. With limited funds currently available, a few larger, significant projects will be more attractive and more productive per dollar than a scattering of minor efforts.

Just what are these needs and opportunities in research and how do they relate to objectives? To this there can be no simple answer, because opinions will vary as to priorities in such a big field. At least one major objective is already on record: "a better understanding of the tubercle bacillus and its complex relationships with the host." Surely another would be a better understanding of how antimicrobial drugs act against the bacillus.

Fortunately, these two objectives are not new to the research program. A start has been made, and investigators sponsored by the NTA-ATS have made progress in determining the nature of the tubercle bacillus and how drugs attack this microörganism. It is known, for instance, that the cell walls of tubercle bacilli contain substances not found in the lower animals or man. Such an important difference might be the basis for the synthesis of drugs which would attack the cell directly without injuring the tissue of the host, and possibly be more effective than those now available.

Another exciting new avenue today is the field of mycobacteriophages—viruses which attack the tubercle bacillus and its relatives. Preliminary studies with these mycobacteriophages are proving useful in the understanding of the internal structure and reproductive mechanism of the bacillus. These studies on mycobacteriophages are in their infancy and represent an area of basic research with great potential. Since each phage is specific for certain strains, research in this area has already had practical results in the use of phages for classifying various strains of mycobacteria. Knowledge of phages may eventually lead to improved vaccines or even better treatment. Such studies must be expanded.

New techniques and instruments are rapidly being developed and put into use in various scientific fields. We should not neglect the opportunity to employ every new scientific technique and instrument which could be of help in tuberculosis research. For instance, a new electron microscope has produced pictures of live bacteria, a feat which had seemed impossible. Only dry and dead materials can be studied with the commonly used electron microscopes. Magnifications of 100,000 for the study of the life processes of the tubercle bacillus are now possible.

Another series of objectives will cover the development of new tools for case detection. In spite of the greatly increased use and obvious utility of the tuberculin test, the evaluation of its potential, the development of more stable and standard testing materials, and tests of different methods of administration lag shamefully.

Epidemiological studies are an urgent necessity if the many practical difficulties are to be surmounted.

There is considerable evidence that a serum or blood test for antibodies, or even antigens, useful for screening and diagnostic purposes, is within reach. Considering the possible benefits, further developmental and evaluation research would seem to be obligatory.

Many other questions important to tuberculosis eradication depend for answers on carefully planned epidemiological projects. A few questions begging for answers are:

- How many patients relapse?
- What kinds of patients are more likely to relapse?
- How soon do they relapse?
- How many new infections with drug-resistant organisms are taking place?
- Why do so many tuberculosis patients receive inadequate treatment?

This brief listing of possible objectives and areas in which specific research opportunities appear to exist is by no means exhaustive. Furthermore, it does not include examples from the vast expanses of other respiratory disease fields, to which the Committee must also devote a part of its deliberations and money.

To expedite matters, two specific proposals were made for consideration by the president and Council of the ATS. The first of these involves the structure of the Committee itself. To provide for more flexibility and efficiency, the size of the Committee would be reduced to approximately five members plus the representatives from the NTA Board of Directors and the National Conference of Tuberculosis Workers. The Committee would be expected to call upon consultants for technical guidance as necessary.

The second proposal calls for a conference or series of consultations with experts from this country and abroad who have special competence in such fields as microbiology, the physiology and anatomy of microbial cells, immunology, and pharmacology. The purpose would be to review pertinent information already available and to identify areas which could be explored profitably at the present time.

The newly constituted Committee will be confronted with many immediate responsibilities in addition to those it carries over from the traditional program. It will need courage, good judgment, and both moral and financial support from everyone dedicated to the extinction of tuberculosis. «

Dr. Feldmann at his desk at NTA.

Floyd M. Feldmann, M.D., Resigns

Has Made Many Contributions to Research

■ FLOYD M. FELDMANN, M.D., director of the Division of Research of the National Tuberculosis Association, has resigned, effective July 1, and will join the staff of the Department of Public Health, Cornell University Medical College, New York, N.Y.

With the NTA since 1949, Dr. Feldmann served as assistant to James E. Perkins, M.D., managing director, until 1955 when he was named medical director. The following year he was appointed to head the Division of Research.

During the time that Dr. Feldmann has been director of research, there has been increasing interest throughout the voluntary tuberculosis movement in the NTA research program, and voluntary contributions toward the program from constituent and affiliated associations has grown from approximately $18,000 for the year 1955-56 to slightly more than $88,000 for the year 1960-61.

Always alert to new developments, Dr. Feldmann was largely responsible for the promotion of interest in mycobacteriophages in tuberculosis research. He also organized the cooperative study to test the efficacy of the Parlett-Youmans serologic test for tuberculosis, and interested the Armour Research Foundation in its present efforts to develop a modified tuberculin test technique that would preserve the advantages of the Mantoux test but would obviate the necessity of using a hypodermic needle.

Immediately prior to coming to the NTA, Dr. Feldmann spent a year with the U.S. Public Health Service in Washington as medical director, Central Coordination and Analysis Office, and executive secretary of the Tuberculosis Study Section. Part of his responsibility was to help plan and supervise controlled trials on the use of streptomycin following the introduction of that drug in tuberculosis treatment.

In his new position, Dr. Feldmann will be associated in research with Walsh McDermott, M.D., Livingston Farrand professor of public health at Cornell, and his associate, Robert McCune, M.D., and will also teach.

Dr. Feldmann was recently elected to the Board of Directors of the New York Tuberculosis and Health Association. «

40 of Research Grants

■ FORTY-ONE YEARS AGO four members of the executive committee of the National Tuberculosis Association put their hands in their respective pockets and brought out $100 each. The NTA added $100 to the pot, and the sum of $500 was turned over to William Snow Miller for his studies of the anatomy of the lung, studies that culminated in the publication of his classic, *The Lung*.

It was the first research grant in aid made under NTA sponsorship.

It was the prelude, too, to the formal establishment of a research grants-in-aid program, which got under way in 1921 with a budget of $20,000 and the award of four grants.

In the 40 years since 1921, the NTA has appropriated approximately $3,700,000 for research grants.

The most recent grants awarded, to be effective July 1, are 33 approved by the Committee on Research of the NTA's medical section, the American Thoracic Society, at a meeting in New York in the spring. The total expenditure for these grants will be $274,039. The funds are derived from a percentage of Christmas Seal funds allocated to the NTA by the affiliated associations and from special contributions from state and local associations.

With a reorganization and expansion of the medical research program, which included the establishment of a Division of Research in 1947, responsibility for the screening of applications for grants was placed with the ATS committee. The committee, which now reviews applications for both medical and social projects, consists of 18 men and women. Three are representatives of the NTA Board and one represents the National Conference of Tuberculosis Workers. The present committee is under the chairmanship of William R. Barclay, M.D., of the University of Chicago.

The recently approved grants reflect not only an eight-fold numerical increase, but subject-wise reflect the broadening interests of investigators seeking research support from NTA.

The four grants of forty years ago were made to Dr. Miller for a continuation of his anatomical studies; to Esmond R. Long, who was studying the metabolism of the tubercle bacillus, studies which were to lead to the identification of the active principle of tuberculin and the development of PPD by Dr. Long and his associate, Florence Seibert; to a special committee to work on the standardization of X-ray techniques; and to Ernest L. Walker for an investigation of the possible value of chaulmoogra oil in treating tuberculosis—the first, but by no means the last, NTA grant in the field of the chemotherapy of tuberculosis.

Of the 33 grants for 1961-62, 17 are for studies related to microbiology, a field which has always been particularly attractive to tuberculosis investigators; 10 are concerned with pulmonary anatomy and function, a field of growing importance in the understanding of respiratory crippling effects of emphysema, tuberculosis, and other conditions; four are classified as epidemiology and social research; and two are in support of services provided for scientists the world over—culture banks of mycobacteria and other acid-fast bacilli.

Eighteen states, the District of Columbia, and three foreign countries are represented by the grantees. The other countries are Japan, where Kiyoshi Konno, M.D., is working on the biochemical classification of mycobacteria under a renewal of a grant awarded last year; Canada, where William Thurlbeck, Ch.B., McGill University, Montreal, will try to produce pulmonary emphysema in animals; and the Netherlands, where Arend Bouhuys, M.D., of the University Hospital in Leiden, is planning a project to evaluate the physical working capacity of patients with pulmonary disease. (A complete list of the grantees and the subjects of their projects will be found on page 7.)

The research committee has taken the position that the significance of the research itself and the training of the investigator, rather than the location of the laboratory or hospital, should be the determining factors in deciding upon grants. While not encouraging applications from other countries, the committee believes it is contrary to the scientific spirit to rule out a good project because the investigator is working outside the United States. For, of course, the truths established by scientific research have universal application.

—AGNES FAHY

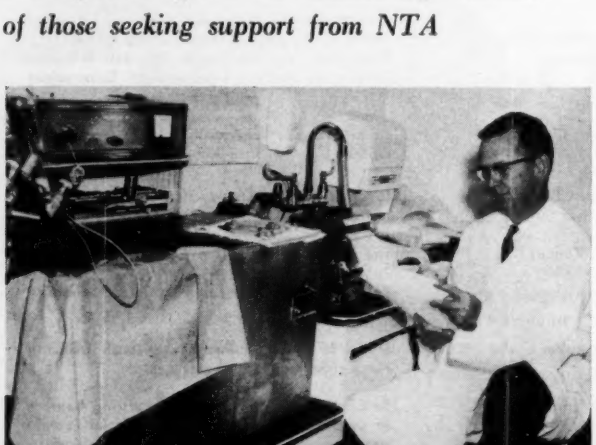
NTA-ATS RESEARCH GRANTS 1961-1962

CALIFORNIA		
Dunn, Max S., Ph.D.	University of California, Los Angeles	Chemistry of Tubercle Bacilli
Froman, Seymour, Ph.D.	Olive View Hospital, Olive View	Effect of Bacteriophage Infection on Morphology of the Tubercle Bacillus
Raffel, Sidney, M.D.	Stanford University, Stanford	Allergy and Immunity to Tuberculosis
Sellers, Margret I., Ph.D.	University of California, Los Angeles	Mycobacteriophages and Their Host-Cell Interactions
COLORADO		
Reiss, Oscar K., Ph.D.	University of Colorado, Denver	Studies of the Metabolism of Lung
DISTRICT OF COLUMBIA		
Edwards, Lydia B., M.D.	U.S. Public Health Service, Washington	Study of Specificity of Tuberculin Test
ILLINOIS		
Armour Research Foundation	Chicago	Modification of Tuberculin Test
Carton, Robert W., M.D.	Presbyterian-St. Luke's Hospital, Chicago	Study of the Elastic Tissue of the Lungs
Youmans, Guy P., M.D.	Northwestern University, Chicago	Evaluation of Usefulness of Gel Diffusion Techniques for the Detection of Tuberculous Disease
KANSAS		
Fitzpatrick, Martin, M.D. Hospelhorn, Verne, Ph.D.	University of Kansas, Kansas City	Amino Acid Composition of Pulmonary Elastin
KENTUCKY		
White, Arthur C., M.D.	University of Louisville, Louisville	Lysogeny and Transduction with Mycobacteriophages
MISSOURI		
MacInnis, Florence, M.D.	Kansas City Public Schools, Kansas City	The Tuberculin Test as a Case-Finding Tool in Tuberculosis
Hanlon, C. Rollins, M.D.	St. Louis University, St. Louis	Role of Tracheostomy in Impaired Pulmonary Function
NEW MEXICO		
Hentel, William, M.D.	Veterans Administration Hospital, Albuquerque	Study of Major Pulmonary Disease Utilizing Fume Inflation Technique
NEW YORK		
Anderson, Odin W., Ph.D.	Health Information Foundation, New York	To Explore the Literature and Existing Sources of Data Relating to Health and Social Factors
McDermott, Walsh, M.D.	Cornell Medical College, New York	Host-Parasite Relationships in Tuberculosis
McCune, Robert, M.D. Steenken, William, D.Sc.	Trudeau Foundation, Saranac Lake	Maintenance of the Tubercle Bacillus Culture Bank
NORTH CAROLINA		
Willett, Hilda Pope, Ph.D.	Duke University Medical Center, Durham	Metabolism of Tubercle Bacilli
OHIO		
Moses, John M., M.D.	Western Reserve University, Cleveland	Studies on the Role of Lymphocytes in Tuberculin Fever
OKLAHOMA		
Patnode, Robert A., Ph.D.	University of Oklahoma, Oklahoma City	Susceptibility of Leucocytes from Tuberculin-Sensitive Host to Injury
PENNSYLVANIA		
Braude, Abraham I., M.D.	University of Pittsburgh, Pittsburgh	Protoplasts of Pathogenic Fungi
Israel, Harold L., M.D.	Jefferson Medical College, Philadelphia	Epidemiology of Sarcoidosis
Lurie, Max B., M.D.	Henry Phipps Institute, Philadelphia	Genetic Resistance to Tuberculosis in Rabbits
TENNESSEE		
Zeidberg, L. D., M.D.	Tennessee Department of Health, Nashville	Bacteriologic, Clinical, and Epidemiologic Studies of Atypical Acid-Fast Bacilli
TEXAS		
Jenkins, Daniel E., M.D.	Baylor University, Houston	Clinical and Pathological Correlations in Pulmonary Tuberculosis and Related Conditions Using Inflation and Fixation Techniques
UTAH		
Hill, Gilbert A., Ph.D.	Latter Day Saints Hospital, Salt Lake City	Mechanisms of Resistance to Systemic Mycotic Infection
Marcus, Stanley, Ph.D. Runyon, Ernest H., Ph.D.	Veterans Administration Hospital, Salt Lake City	Maintenance of Mycobacterial Culture Bank
WASHINGTON		
Martin, Carroll J., M.D.	Firland Sanatorium, Seattle	Ventilation of Lung Lobes
WEST VIRGINIA		
Tulou, Pierre P., M.D.	Veterans Administration Center, Martinsburg	Changes in Physiological Dead Space
WISCONSIN		
Smith, Donald W., Ph.D.	University of Wisconsin, Madison	Immunization of Guinea Pigs Against Tuberculosis with Non-Living Vaccines
CANADA		
Thurlbeck, William, Ch.B.	McGill University, Montreal	Experimental Production of Pulmonary Emphysema
JAPAN		
Konno, Kiyoshi, M.D.	Tohuku University, Sendai	Biochemical Classification of Mycobacteria
NETHERLANDS		
Bouhuys, Arend, M.D.	University Hospital, Leiden	Physical Working Capacity in Pulmonary Disease Patients

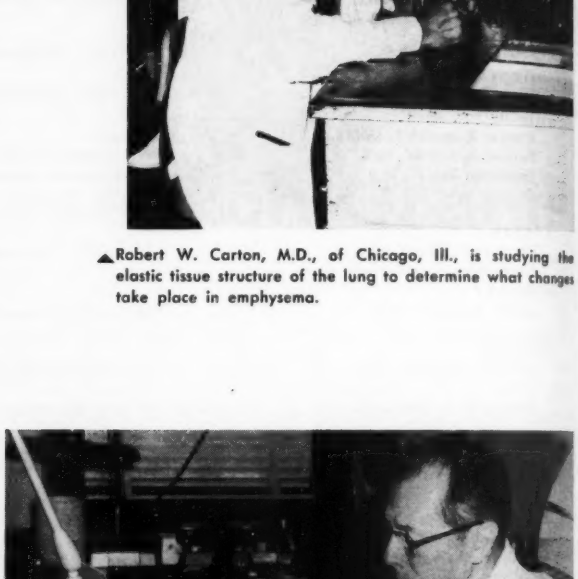
NTA-ATS Research Grantees at Work

The work being done by these four investigators reflects the broadening interests of those seeking support from NTA

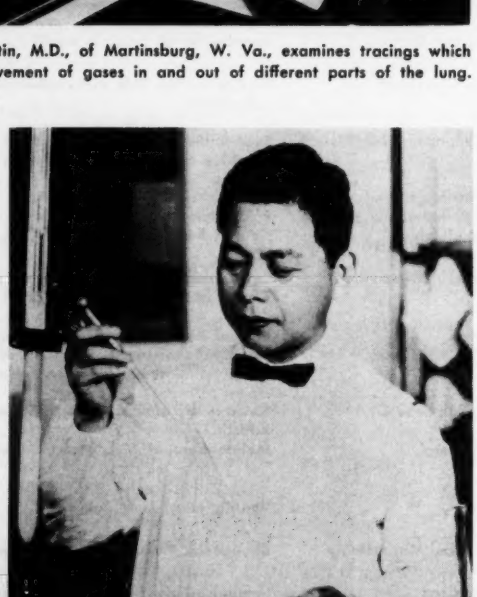
▲ Robert W. Carton, M.D., of Chicago, Ill., is studying the elastic tissue structure of the lung to determine what changes take place in emphysema.



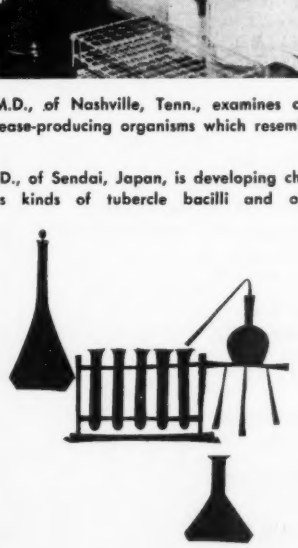
▲ Carroll J. Martin, M.D., of Martinsburg, W. Va., examines tracings which record the movement of gases in and out of different parts of the lung.



▲ L. D. Zeidberg, M.D., of Nashville, Tenn., examines cultures of atypical or unclassified disease-producing organisms which resemble tubercle bacilli.



◀ Kiyoshi Konno, M.D., of Sendai, Japan, is developing chemical methods for classifying various kinds of tubercle bacilli and other mycobacteria.



Mantoux Tuberculin Test Reaffirmed

■ THE USE OF THE MANTOUX TUBERCULIN TEST with PPD (Purified Protein Derivative) in preference to other techniques was reaffirmed in a statement by the Committee on Diagnostic Skin Testing of the American Thoracic Society. The statement, adopted in February, has been approved by the ATS executive committee and is published in the June issue of *The American Review of Respiratory Diseases*.

While recognizing the need for a simpler test than the Mantoux, the Committee warns that there is no scientific evidence that other tests now available are as accurate as the Mantoux for mass surveys.

The complete statement is as follows:

> Tuberculin surveys of schools, and other comparable groups, are laborious and should be planned to yield the maximum amount of useful information. The best standardized tuberculin is PPD; the best method of administration is the intracutaneous or Mantoux method. A dose of 0.0001 mg. (5 TU) [tuberculin units] should be administered and the reaction recorded in millimeters after 48 to 72 hours. Quantitative data collected in this manner make possible accurate comparisons of the tuberculous infection rate in different grades, at various ages and in different states. This also makes possible accurate measurements of the tuberculin rate in the same school year after year. The quantitative readings identify, by their larger reactions, those individuals and their contacts who are more likely to have or to develop active disease.
>
> The committee is well aware of the search for a simpler, more convenient method of administering the tuberculin test. In the opinion of the committee the first requirement is adequate scientific proof that the frequency of the reactions produced by other methods approximate that produced by the 5 TU Mantoux test. Moreover, the same persons should be identified as reactors or non-reactors by both tests. Such comparable data are not now available for any of the presently proposed tests. Information available indicates that multiple puncture methods, such as the Heaf test, are essentially strong dose tests and there is no scientific evidence available that adjustments can be made by dilution to give results comparable to the 5 TU Mantoux test. Until such evidence is presented, the committee does not recommend the use of the patch or multiple puncture tests for survey purposes.
>
> (Signed) Michael L. Furcolow, M.D., Chairman
> Robert J. Atwell, M.D.
> Lydia Edwards, M.D.
> Mrs. Rena W. Harris (NCTW)
> Julius B. Novak, M.D.
> David T. Smith, M.D.
> Samuel C. Stein, M.D.

The Committee arrived at its decision after an extensive discussion of two new tests that have been developed. These are the Heaf test with its variations and the tine test.

RECENTLY-DEVELOPED TESTS

The Heaf test

The Heaf test instrument, sometimes called a gun, drives tuberculin into the skin by means of spring-driven needles, the skin previously having been wet with a strong tuberculin solution. The original Heaf testing mechanism, which is still in use, has needles which are flamed after each test, while in more recently developed mechanisms the needle heads are changed after each test and can be used again after sterilization.

Some of the advantages claimed for the Heaf type test are that it is fast, easy to perform, there is no pain, and it is easily read. The major disadvantages are the inability to measure the amount of tuberculin actually entering the skin and the inability to administer a dose of tuberculin equal to the standard 5 TU Mantoux test. The strength of the solution used with the Heaf method is equal to about 100 to 250 TU, with the result that more people with insignificant amounts of sensitivity are discovered. The initial expense of the Heaf apparatus is high, and bleeding can occur if it is not used properly.

The tine test

The tine test is a recent attempt to replace the patch test. The tine test consists of a simple plastic cylinder to which four prongs are attached. Tuberculin is dried onto the prongs in the manufacturing process. The cylinder is pressed on the arm so that the prongs penetrate the skin, and the whole thing is then thrown away. There is no evidence yet as to the accuracy of the tine test as compared to the Mantoux. In principle it resembles the Heaf test and, again, the dose is not measurable. The chief advantages are convenience and simplicity.

Hypospray Jet Injector

The Hypospray Jet Injector, which is being tried in several states, is another newly developed way to administer the tuberculin. By this method, a bottle of tuberculin is fitted onto a pistol-like mechanism, and each time the trigger is pulled a dose of tuberculin is forced through a tiny hole with sufficiently high pressure so that the jet stream penetrates the skin. Since no needle is used, this method eliminates the need to sterilize after each test. In addition, the testing can be done rapidly. On the other side of the picture, the initial expense is great, but this may be offset by broad use of the mechanism in surveys. At present, the NTA does not have any information on tuberculin testing programs in which the Hypospray Jet Injector has been compared with standard Mantoux tests. Mechanical difficulties have plagued some early trials. »

SUPPLEMENTARY CONTRIBUTIONS TO THE RESEARCH PROGRAM—FINAL FIGURES FOR 1960-61

Contributor	Amount	Allocation
**CONNECTICUT		
Local associations fund	$4,448	Armour
Local associations fund	2,200*	Dr. K. Konno
Local associations fund	1,000	Dr. B. Castleman
DELAWARE		
Delaware TB and Health Society	3,000	Armour
FLORIDA		
Palm Beach County	300	Dr. H. P. Willett
HAWAII		
Maui County	25	Dr. J. K. Jackson
ILLINOIS		
Illinois TB Assn. (Henry Stevens Mem)	127	Dr. G. P. Youmans
**INDIANA		
Indiana TB Association	2,192	Armour
Delaware County	6,895	Dr. A. C. White
IOWA		
Local associations fund	1,000	Armour
Local associations fund	8,979*	Dr. O. K. Reiss
Local associations fund	6,466	Dr. W. McDermott
KANSAS		
Local associations fund	2,934	Dr. G. A. Hill & Dr. S. Marcus
KENTUCKY		
Simpson County	500	Dr. A. C. White
MAINE		
Maine, Bangor-Brewer and York TB Associations	360	Armour
NEW JERSEY		
New Jersey Medical Research and Teaching Fund	7,306* / 2,000	Dr. S. Raffel / Dr. G. P. Youmans
Somerset County	3,550	Dr. H. P. Willett
NEW YORK		
New York TB & Health Association	3,000	Armour
NORTH DAKOTA		
Local associations fund	2,933*	Dr. H. S. Willis
Local associations fund	6,245	Dr. G. P. Youmans
OHIO		
Montgomery County	500	Dr. L. H. Schmidt
Ottawa County (Henry Stevens Mem)	250	Dr. G. P. Youmans
OREGON		
Douglas County	25	Dr. J. K. Jackson
Grant County	10	Dr. J. K. Jackson
Jackson County	25	Dr. J. K. Jackson
Lincoln County	50	Dr. J. K. Jackson
Yamhill County	15	Dr. J. K. Jackson
SOUTH CAROLINA		
Orangeburg County	100	Dr. H. P. Willett
SOUTH DAKOTA		
Perkins County	25	Dr. G. P. Youmans
Stanley County	50	Dr. J. K. Jackson
TENNESSEE		
Davidson County	1,500	Dr. A. C. White
WASHINGTON		
Asotin County	100	Dr. G. P. Youmans
Clallam County	1,000	Dr. G. P. Youmans
Grant County	100	Dr. G. P. Youmans
Jefferson County	100	Dr. G. P. Youmans
Lincoln County	500	Dr. G. P. Youmans
Skagit County	500	Dr. G. P. Youmans
Snohomish-Island County	1,500	Dr. G. P. Youmans
Spokane County	1,000	Dr. G. P. Youmans
Yakima County	500	Dr. G. P. Youmans
WISCONSIN		
Local associations research fund	3,357*	Dr. A. A. Siebens
Local associations research fund	6,000*	Dr. D. W. Smith
OTHER CONTRIBUTIONS		
Salon National la Boutique	1,000	Dr. F. E. Mackesie
L. L. Taylor (Henry Stevens Memorial)	10	Dr. G. P. Youmans

*Full support

**Connecticut and Indiana contributed sums in excess of the amount needed for full support of the projects they chose. The excess has been carried forward in an escrow account, credited to the 1961-62 program.

EDITOR'S NOTE:
As we go to press, contributions and/or pledges for the 1961-62 grant year have been received from Connecticut; Maui County, Hawaii; Iowa; Kansas; Barnstable County, Massachusetts; New Jersey; Somerset County, New Jersey; New York TB and Health; Belmont County, Ohio; Sullivan County, Tennessee; Asotin and Stevens Counties, Washington; and Wisconsin. A complete list of contributions for 1961-62 will be published at a later date.

The Minnesota Pla

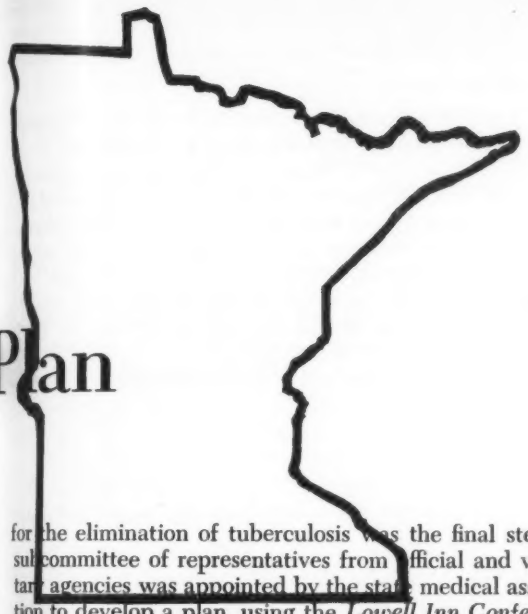
■ In past years, Minnesota's public health, voluntary health and professional organizations have made important individual contributions to the reduction of cases and deaths from tuberculosis. Now another milestone has been reached: a "united front" plan that has the support of every individual and organization in the state interested in fighting tuberculosis. This Minnesota Plan is contained in a document entitled, *Tuberculosis Control and Treatment in Minnesota*, which has been published in full in the February, 1961, issue of *Minnesota Medicine*, a publication of the state medical association.

Following are some of the events which led to the development of the Minnesota Plan and the leading recommendations of this document which charts Minnesota's course toward the eventual elimination of tuberculosis as a public health menace.

Chronologically, three events were extremely important in the development of the plan. For several years, the Pulmonary Committee of the Minnesota State Medical Association had been working to develop certain principles to strengthen the tuberculosis control program. These principles were developed, accepted by the Minnesota State Medical Association, and eventually published.

The two other events were the Arden House Conference and the Lowell Inn Conference. The latter, a conference of the Consultation Committee of the Minnesota Thoracic Society, was given the responsibility of developing specific recommendations for the control and treatment of tuberculosis in the state. The resulting *Lowell Inn Conference Report* was adopted by the membership of the Minnesota Thoracic Society at one of its regular meetings and also referred to the Pulmonary Committee of the state medical association and the executive board of the Minnesota Tuberculosis and Health Association. At an early meeting, the MTHA executive board endorsed the report and expressed the hope that widespread support of the recommendation would result.

The development of the full-blown Minnesota Plan



sotaPlan

Herman Kleinman, M.D.

and Josiah G. Neal

for the elimination of tuberculosis was the final step. A subcommittee of representatives from official and voluntary agencies was appointed by the state medical association to develop a plan, using the *Lowell Inn Conference Report* and the *Principles of Tuberculosis Control* as a guide. This committee consisted of representatives of the Pulmonary Committee of the state medical association, the Minnesota Thoracic Society, the state department of health, the state department of welfare, the University of Minnesota, the Minnesota Tuberculosis and Health Association, and members of the nursing and veterinary medicine professions. After several meetings, the committee developed the Minnesota Plan, incorporating the principles developed by the Pulmonary Committee of the state medical association and the recommendations of the Thoracic society.

During these meetings, the Arden House Conference Report served as a stimulus to the cooperative effort. The Minnesota Tuberculosis and Health Association played several leading roles in the proceedings by providing leadership from its Board and staff, a meeting place, clerical services, and duplicating facilities.

The document, *Tuberculosis Control and Treatment in Minnesota,* has received widespread endorsement from all organizations in Minnesota concerned with the control and eventual elimination of tuberculosis. Following are a few of the recommendations contained in the report with comments on current progress concerning those recommendations which have already been put into motion. Some of the recommendations have been abridged; others have not been included for the sake of brevity.

Facilities and personnel

- A physican with training in public health and with adequate experience in the control of tuberculosis should be employed by the Minnesota Department of Health as a Tuberculosis Control Officer to coordinate and carry out the control program for the entire state.
- The additional personnel and facilities necessary for implementation of the tuberculosis control program should be provided by the Minnesota Department of Health to assist physicians and county nurses in the follow-up and management of tuberculous patients and to assist in obtaining epidemiologic data concerning tuberculosis.

The above personnel have been included in the official budget request to the state legislature by the department of health. The Executive Board of the Minnesota Tuberculosis and Health Association has offered additional financial assistance to the department of health if the state legislature, during its current session, meets this budgetary request.

- The public health nursing staff should be increased in counties having a high incidence of tuberculosis. There should be at least one nurse in every such county, and additional nurses should be provided if needed.

A bill has been presented to the legislature to provide additional financial assistance to counties desirous of improving Public Health Nursing Service.

- Greater utilization should be made of the eight district offices of the Minnesota Department of Health for local tuberculosis control, and each district office should maintain a case register.

The Minnesota association, at its Annual Meeting on March 10, 1961, adopted a reorganizational plan which will create regional councils. The areas covered by these councils will follow identically the boundaries of the department of health districts, and it is believed that they will strengthen these districts.

- A special Tuberculosis Mortality Committee of the Minnesota State Medical Association should be appointed to study all deaths from tuberculosis in Minnesota, especially in those cases first reported by the death certificate.

This committee has been established by the department of health, working cooperatively with the state medical association and the Minnesota Thoracic Society. Meetings have been held, and plans have been made for the future action of this committee.

Several specific recommendations have been made to increase tuberculin testing in schools and communities and also the X-raying of reactors. This type of case-finding is definitely on the increase in Minnesota.

- All school teachers and school employees should be required by law to show freedom from active tuberculosis as evidenced by an annual chest X-ray examination or by presenting evidence of a negative tuberculin reaction within the preceding year.

Such legislation was sponsored by the Minnesota association and passed during the 1961 Legislative session.

Treatment of active tuberculosis — prevention and prophylaxis—follow-up and rehabilitation

These sections of the report recommend specific guidelines for the physician in treating tuberculosis. Since they are medical in nature, it is perhaps best to leave publication and comment on them to the medical literature. As has been mentioned previously, the entire document, *Tuberculosis Control and Treatment in Minnesota,* has been published in the February, 1961, issue of *Minnesota Medicine.** Needless to say, these recommendations will require some in-service education of physicians. At present, educational conferences, meetings, and institutes are being carried out, and others are being considered by the Minnesota association, the thoracic society, the Pulmonary Committee of the state medical association, and the Rehabilitation Division of the state department of education.

Education, research and coordination

- Education of the public and physicians and other professional groups in the basic principles of modern tuberculosis control should be persistent and intensive.
- The private physician will play an ever-increasing role in the treatment of tuberculosis, particularly in non-urban regions. More information regarding control and therapy must be made available to him.

*Reprints of this document are available from the Minnesota Tuberculosis and Health Association, 614 Portland Avenue, St. Paul 2, Minnesota.

The Minnesota Thoracic Society has established a speakers' bureau for the above purpose. It is expected that this speakers' bureau will also be of great assistance to the Minnesota association in carrying out its educational program.

- Closer cooperation is desirable among all groups concerned with tuberculosis in Minnesota.

Endorsement of the Minnesota Plan by many groups, in our opinion, represents a good start toward coordination of the activities of all groups. A year ago, the Minnesota association adopted a new constitution and set of bylaws providing for closer cooperation between the association and the thoracic society. These two groups held their first joint annual meeting on March 10, 1961.

- More research is encouraged.

During the past year, the association has more than tripled its grants to research. A research committee of the association has established criteria for the selection of research projects worthy of financial support. These grants are in addition to the 1 per cent of the gross Christmas Seal Campaign funds annually sent to the NTA for research purposes.

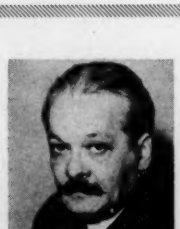
Legislation

- The Legislative Committee of the Minnesota Thoracic Society and the Minnesota Tuberculosis and Health Association should work with the appropriate committee of the Minnesota State Medical Association for the purpose of proposing legislation regarding tuberculosis care and control to be presented to the forthcoming session of the State Legislature.

The department of health has proposed bills during the current session of the legislature, covering most of the legislative recommendations of the report. These bills have the full support of the Legislative Committee of the Minnesota association, as well as of other groups mentioned in this report.

* * *

The Minnesota Plan truly represents a united front in the battle against tuberculosis. The plan is practical, workable and characteristic of the enthusiasm and interest of the Minnesota physicians and lay persons who have worked hard during the past half century to bring tuberculosis control and treatment to its present level. It is quite apparent that a new day is dawning in this fight. It is equally apparent that Minnesota has the resources necessary to win the battle.



Herman Kleinman, M.D., left, president of the Minnesota TB and Health Association, is Chief, Section of Chronic Diseases, Minnesota Department of Health. He formerly served with the state's polio surveillance program and as a consultant on Indian health. Dr. Kleinman holds a master's degree in public health in addition to a doctorate in medicine. Josiah G. Neal has been managing director of the Minnesota association for the past three years. Prior to that time, he was a consultant with the state department of education. He is well known in educational circles, having served on many national committees. He holds a master's degree from the University of Minnesota and is completing requirements for a Ph.D.

▶ STRIKE NOW – To wipe out TB while man has the odds in his favor.

▶ STRIKE NOW – Before the TB bacillus produces so many mutants that the odds are equalized again.

■ WHEN A TUBERCULOSIS PATIENT is being treated properly, samples of the germs that cause his disease are regularly tested to see how they respond to TB drugs. Increasingly the disappointing reports are coming from the lab: "Resistant to one or more drugs."

To the patient this means "You have less chance of getting well."

To the nation this means "The chances of eliminating TB have dropped another notch."

What is drug resistance?

Drug resistance in TB can be compared with the way that flies and mosquitoes are becoming resistant to DDT. When DDT was first used widely after World War II, it nearly wiped out the insects that came in contact with it. But one insect in a million or ten million, perhaps, didn't die from it—and that insect reproduced. Now we have flies and mosquitoes that practically can eat DDT and like it.

The same thing happened with penicillin and some of the germs that it fought. At first penicillin was an almost sure cure for a staphylococcus infection. This is a germ that spreads like wildfire (and kills) in hospitals where the standards of medical cleanliness fall down the least bit. Penicillin controlled it. But along came a staphylococcus that sneered at penicillin. Readers of the daily papers know that this killer is again a major problem.

The same selective mechanism seems to be at work with the TB germ. One TB bacillus out of a million or more is naturally resistant to one of the TB drugs. This resistant bacillus lives and spreads. Not like wildfire, because TB is a slow-moving disease, but laboratory findings tell the story: Drug-resistant TB germs are living and increasing inexorably.

Under ideal treatment conditions, drug-resistant germs may be expected to develop in less than five per cent of TB patients. In poorer treatment programs, tests for drug resistance usually are not regularly made, so the question of how high the percentage may rise is unanswerable.

Patients who develop drug-resistant germs during treatment are passing those germs on to other people. This fact is demonstrated by the increase in patients never before treated whose germs show drug resistance. Conservative estimates are that 5 to 10 per cent of TB patients treated for the first time are infected with bacilli resistant to one or more of the three principal drugs.

How much is drug resistance increasing?

The best study shows a definite increase over a five-year period. In 1952, 2.5 per cent of the *new* TB patients in Veterans Administration hospitals showed drug resistance to streptomycin. In 1957, the figure for all drug resistance was 5 per cent. A later and more comprehensive study is now in progress.

Studies from abroad, where drugs have often been administered somewhat indiscriminately, report drug resistance figures among new patients ranging up to 15 per cent.

When resistance appears, can't other drugs be used?

Treatment of any active case of tuberculosis requires at least two drugs—because resistance will quickly appear if only one is used. Some forms of TB require treatment with all three principal drugs.

The long treatment necessary in advanced TB often results in the appearance of drug resistance even when two drugs are used. A switch to the third drug is then necessary.

To give one specific example of what drug resistance means, a child with tuberculous meningitis caused by a TB bacillus resistant to one of the major drugs would have his chances of living cut from about 85 in 100 to 50 in 100.

Will new drugs be found?

Who knows?

Streptomycin was found in 1945. PAS, in 1948. Isoniazid, in 1952. Since 1952, no drug equal to these three has appeared.

Certainly the hope of the early 1950's that there would be a succession of powerful new drugs every three or four years has not been realized.

What can be done to stop the development of drug resistance?

Strike now to wipe out TB, while man has the odds in his favor. Strike now before the TB bacillus produces so many mutants that the odds are equalized again.

See that all cases are found.
See that all cases are treated properly
—with the right combination of drugs
—continuously
—for a long enough time. «

Behind the scenes: Robert Wilmot directs children in theme shot.

"Merry-Go-Round"

■ A WARM AND EXCITING film about a woman doctor who seeks an answer in her own community to a vital question. This is "Merry-Go-Round," NTA's dramatic new presentation of the tuberculosis problem as it is today. The film is a powerful weapon for use in the drive to bring to reality the Arden House recommendations for eliminating tuberculosis as a public health problem in the U.S.

To make the most of this weapon produced by writer Millard Lampell, Academy Award-winning cameraman Boris Kaufman, and an expert team of technicians, TB associations will take part in the "Merry-Go-Round" Campaign.

Like previous educational campaigns put into motion by NTA, the "Merry-Go-Round" Campaign will be an effort to get the message to media people, to other voluntary agencies and—most important—to thousands of citizen groups throughout the country.

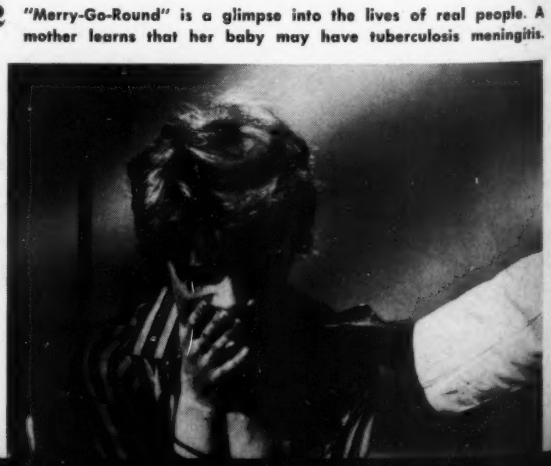
A specially prepared guide for volunteer and staff discussion leaders will help to pinpoint reasons as to what needs to be done in any particular community and to determine who is responsible for filling the gaps. Thorough discussions following the showing of the film are necessary because the film raises questions rather than presenting facts. The answers will have to come from the audiences themselves.

The guide is keyed to three different types of groups: professional, medical, and nursing associations; community action groups such as chambers of commerce and political clubs; and the groups of citizens who are thought leaders: lodges, church groups, parent-teacher's associations, and others.

"Merry-Go-Round" was produced by NTA with the partial financial support of E. R. Squibb & Sons Division of Olin Matheison Chemical Corporation. The woman doctor is beautifully portrayed by well-known Hollywood actress Mildred Dunnock. «

1 The central figure is a devoted doctor who pauses in the daily whirl of her unending duties to ask why tuberculosis is so far from being defeated. Her questioning is poignantly dramatized in a child who skips rope and sings her play song throughout the film.

2 "Merry-Go-Round" is a glimpse into the lives of real people. A mother learns that her baby may have tuberculosis meningitis.



3 Whenever a case of TB occurs, someone somewhere didn't do what he should have done. Does this man have only a smoker's cough?

4 Who has the infection? Who spreads it? The mother of the little girl skipping rope—is her condition really chronic bronchitis?

5 "How could I have tuberculosis? I'm not some beat-up panhandler. I eat fine, live in a lovely house. I keep walking around thinking . . ."

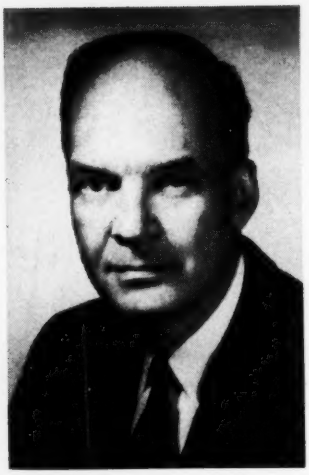
6 "Listen, I'm president of the TB association. It's crucial to keep checking up on cases, but those county records are incomplete."

7 "I'll tell you what a public health officer needs. Six hands. How am I supposed to hire more public health nurses? Look at my budget."

8 "Even if I started giving routine tuberculin tests, it would be a drop in the bucket. You've got to have a city program."

9 "I am a city assemblyman, not a magician. I don't pull appropriations out of a hat. Want me to do something? Start with the voters."

10 At the end, what happens to the little girl who skips rope is a heart-touching synthesis of all the questions asked in the film.



Peter G. Meek Heads NHC

Peter G. Meek has been appointed executive director of the National Health Council. He will take office on August 1.

A specialist in health and welfare administration, Mr. Meek since 1956 has been director of the New York office and northeast regional representative for the National Society for Crippled Children and Adults. His primary responsibility has been representing the Society with other national health agencies and supervising the development of relationships with the television and radio industry.

From 1949 to 1956 Mr. Meek was the assistant director of the Commission on Chronic Illness. During this period, he was visiting lecturer at the Johns Hopkins University School of Hygiene and Public Health.

In March Mr. Philip E. Ryan, executive director of the NHC since 1953, was appointed executive director of the National Association for Mental Health.

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▸ ***H. McLeod Riggins, M.D.,*** was honored recently with the presentation of a Distinguished Service Award by his alma mater, the University of North Carolina. The award, presented at the annual Medical Alumni dinner in Chapel Hill, N. C., was bestowed jointly by the medical faculty and the alumni committee of the university. Dr. Riggins is a former president of the NTA and of the ATS.

▸ ***David A. Cooper, M.D.,*** past president of the Philadelphia TB and Health Association and of the Philadelphia County Medical Society, has been elected president of the Philadelphia General Hospital medical staff.

▸ ***Carl Peter,*** formerly an associate in health education with the NTA, has joined the Toledo and Lucas County (Ohio) association as director of program. Mr. Peter has been in the tuberculosis field since 1947.

▸ ***Dorothy Berg*** was elected chairman-elect of the Community Health Education Section at the recent annual meeting of the American Association for Health, Physical Education and Recreation. Mrs. Berg is director of health education for the Minnesota association.

▸ ***Frances Ogasawara*** has recently joined the NTA Field Program Services Division. Miss Ogasawara has been in the tuberculosis field since 1955, having joined the TB League of Waterbury, Conn., as a health educator in that year. From 1957 until her recent appointment she served the Massachusetts TB and Health League as a program associate in statistics and health education.

▸ ***Roger S. Mitchell, M.D.,*** director of the Webb Institute for Medical Research in Denver, Colo., and 1959-60 ATS president, recently received the James J. Waring Award, given by the Colorado Conference of Tuberculosis Workers in recognition of his outstanding contributions to the control of tuberculosis in Colorado and throughout the United States. In addition to his personal achievements in medicine and research, Dr. Mitchell has greatly contributed to a better understanding of the voluntary tuberculosis association and the needs in medical research and education.

▸ ***William Kenney*** has been promoted to director of public relations of the New York TB and Health Association. Until his recent appointment, he served as a field worker, assigned to Staten Island, N.Y.

▸ ***Clyde H. Reid*** is the new director of public relations for the Brooklyn TB and Health Association. Mr. Reid holds a B.A. in journalism from Michigan State University. ***Morris Greenberg*** has accepted a position as a rehabilitation associate with the Brooklyn association. Until his present appointment, Mr. Greenberg was rehabilitation counsellor with the New York State Department of Social Welfare.

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